

AMENDMENTS TO THE CLAIMS

14. (Currently Amended) A complex porous structure of reticulated material produced by a process comprising:

electroplating said material with metal substantially throughout its entire thickness, over all its developed surface, subsequent to pre-metallizing,

pre-metallizing comprising depositing a homogeneous and continuous coating of conductive polymer on the surface of the openings of the structure, said depositing comprising :

(1) oxidising a base structure comprising pores, consisting of a reticulated cellular structure of high porosity greater than 80%, with a solution containing permanganate/manganate salts and/or cerium IV compounds, this oxidising step leading to the formation of a layer of manganese dioxide at surface of the base structure;

(2) rinsing and drying

(3) depositing in a wet phase, on surfaces of the base structure, a monomer which in polymerized form is electrically conductive;

(4) polymerisation by oxidation-doping of the monomer into an electrically conductive polymer; and

(5) rinsing, wherein said steps are carried out on the base structure, substantially throughout its entire thickness, without clogging the pores of the base structure.

Claim 15. (Original) The structure according to claim 14, wherein the oxidizing comprises treating the base structure with a solution of potassium permanganate.

Claim 16. (Original) The structure according to claim 15, wherein the oxidizing comprises immersing the base structure in a solution of potassium permanganate.

Claim 17. (Original) The structure according to claim 14, wherein the monomer deposited is selected from the group consisting of pyrrole, furane, thiopene and derivatives thereof.

Claim 18. (Previously Presented) The structure according to claim 14, wherein the monomer deposited is selected from the group consisting of pyrrole.

Claim 19. (Original) The structure according to claim 17, wherein the pyrrole is dissolved in an alcohol.

Claim 20. (Original) The structure according to claim 18, wherein the wet phase comprises a pyrrole solution for deposition of the monomer onto the developed surface of said complex structure, said pyrrole solution comprising an aqueous solution comprising at least 50% by volume water, and isopropanol solvent for pyrrole.

Claim 21. (Original) The structure according to claim 18, wherein said depositing comprises precipitation of the monomer by immersing the complex structure in an aqueous solution comprising at least 50% water by volume, and isopropanol as a solvent for pyrrole.

Claim 22. (Previously Presented) A metallized structure produced by claim 14 wherein said electroplating is carried out in an electrolysis bath comprising ions which stabilize or oxidize an anodic structure.

Claim 23. (Original) The metallized structure according to claim 22, wherein the electroplating is carried out under pulsed current with current reversal, at least during an initial phase of electrolysis, until formation of a metallic deposit whose conductivity is at least equal to that of the electrically conductive polymer.

Claim 24. (Original) The metallized structure according to claim 22, wherein the electroplating is carried out during an initial electrolysis phase, until constitution of a metallic deposit of conductivity at least equal to that of the electrically conductive polymer, at a low current density.

Claim 25. (Previously Presented) The metallized structure according to claim 22, wherein said metal used for electroplating is selected from the group consisting of copper, nickel, iron, chromium, zinc, aluminum, tin, lead, gold, platinum, and an alloy mixture of at least two of said metals.

Claim 26. (Original) The complex porous structure of claim 14, further comprising draining and drying following the rinsing subsequent to the oxidizing.

Claim 27. (Previously Presented) The complex porous structure of claim 26, comprising draining following the rinsing subsequent to the polymerization by oxidation-doping of the monomer.

Claim 28. (Previously Presented) The complex porous structure of claim 27, comprising drying following the draining following the rinsing subsequent to the polymerization by oxidation-doping of the monomer.

Claim 29. (Previously Presented) The complex porous structure of claim 28, comprising draining following the rinsing subsequent to the oxidizing pre-treatment of the base structure.

Claim 30. (Previously Presented) The complex porous structure of claim 29, comprising repeating said steps following the rinsing subsequent to the oxidizing pre-treatment of the base structure a preselected number of times.

Claim 31. (Original) The complex porous structure of claim 19, wherein said alcohol comprises isopropanol.

Claim 32. (Original) The structure of claim 14, wherein the reticulated material is selected from the group consisting of foam, felt and fabric.

33. (New) The complex porous structure of claim 14, wherein the resistance of the pre-metallized complex porous structure is at most about 50Ω square.